Spec. Code: 4746(0924)
Occ. Area: 02
Work Area: 029
Prob. Period: 6 mo.
Prom. Line: none
Effective Date: 02/12/91

# MOLECULAR BEAM EPITAXY FACILITY COORDINATOR

Function of Job

Under direction from a designated supervisor, to coordinate the activities of a molecular beam facility and to plan, design, operate, and maintain highly specialized molecular beam epitaxy equipment.

Characteristic Duties and Responsibilities

1. serves as liaison for university departments concerning the use of the facility

2. participates in the development and implementation of policies and procedures for the improvement and use of the facility

3. develops operating budget recommendations and recommends the purchase of new equipment

4. advises and consults with research staff concerning the design or modification of equipment associated with the molecular beam epitaxy system (such as sample mounts, transfer trolly systems, transfer stages and rods, growth manipulators, deposition controls, and diffusion/vacuum pumps and gauges)

5. troubleshoots and repairs deposition and surface analysis systems (such as growth chambers, transfer tubes, sample introduction systems, chemical beam epitaxy systems, and electron spectroscopy chemical analysis systems)

6. assists research staff by preparing, introducing, and transferring samples and growing crystals

7. prepares research progress reports, preventative maintenance schedules, and installation schedules

8. operates, maintains, and repairs molecular beam epitaxy equipment (such as effusion cells, cracker cells, heating stages, outgassing stages, and high vacuum systems)

9. performs related duties as assigned

Minimum Acceptable Qualifications

CREDENTIALS TO BE VERIFIED BY PLACEMENT OFFICER

1. any one or any combination of the following types of preparation:

(a) college course work leading to a major in electronic engineering, engineering technology, or a closely related field

(b) vocational training in electronics or engineering technology or a closely related field

(c) work experience in the installation, maintenance, and design of molecular beam epitaxy equipment

that totals 1.0 unit according to the following conversion rates:

120 semester hours (or Bachelor's degree) of "a" = 1.0 unit

18 months of "b" = 0.5 unit maximum *

3 years of "c" = 1.0 unit.

2. four years of progressively more responsible experience in the design, installation, and maintenance of molecular beam epitaxy equipment, in addition to the preparation required in #1.

PERSONAL ATTRIBUTES NEEDED TO UNDERTAKE JOB

1. knowledge of high technology vacuum equipment and techniques
2. knowledge of ultrahigh vacuum and molecular beam epitaxy sub-systems and components
3. familiarity with gas monitoring equipment
4. skill in the operation and maintenance of molecular beam epitaxy equipment
5. mechanical aptitude
6. ability to coordinate the activities of a molecular beam epitaxy facility
7. ability to work with others

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* That is, up to half (or 0.5 unit) of the total preparation required to satisfy requirement 1 may be this type of training. The balance must be supplied by one or more of the other types of preparation listed above.